

CLAIMS

What is claimed is:

- 1 1. A method for preparing nucleic acid microchips comprising:
 - 2 attaching nucleic acid molecules to a first surface of a first chip, and
 - 3 contacting said first surface of said first chip with a first surface of a second chip.
- 1 2. The method of claim 1, wherein the nucleic acid molecules are DNA.
- 1 3. The method of claim 1, wherein the nucleic acid molecules are RNA.
- 1 4. The method of claim 1, wherein the first surface of the second chip is in a relatively liquid
 - 2 state.
- 1 5. The method of claim 1, wherein the first surface of the second chip comprises a rubber
 - 2 material.
- 1 6. The method of claim 1, wherein the first surface of the second chip comprises an acrylamide
 - 2 layer.
- 1 7. The method of claim 1, wherein the first surface of the first chip comprises a nucleic acid
 - 2 surface density of at least 50 pmoles/ cm², more preferably ranging from 50-2000 pmoles/
 - 3 cm², and most preferably greater than 2000 pmoles/ cm².

- 1 8. The method of claim 1, wherein the nucleic acid molecules are attached to the first surface of
2 the first chip by disulphide bonds.
- 1 9. The method of claim 1, wherein the printing temperature is 25°C.
- 1 10. The method of claim 1, wherein the printing temperature ranges from 25°C -100°C.
- 1 11. The method of claim 1, wherein the printing temperature is 95°C, more preferably 99°C, and
2 most preferably 100°C.
- 1 12. The method of claim 1, wherein the printing temperature is at least 30°C.
- 1 13. The method of claim 1, wherein the printing time varies from about 10 seconds to about 10
2 minutes.
- 1 14. The method of claim 1, wherein the printing time is at least 15 seconds.
- 1 15. The method of claim 1, wherein the number of print chips generated from a single master chip
2 ranges from 2-200 print chips.
- 1 16. The method of claim 1, wherein the number of print chips generated from a single master chip
2 is at least two.

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1 17. The method of claim 1, wherein the nucleic acid is RNA or DNA.

1 **18.** A nucleic acid microchip prepared by a method comprising:

2 attaching nucleic acid molecules to a first surface of a first chip, and

3 contacting said first surface of said first chip with a first surface of a second chip.

1 19. The microchip of claim 18, wherein the nucleic acid molecules are DNA.

1 20. The microchip of claim 18, wherein the nucleic acid molecules are RNA.

1 21. The microchip of claim 18, wherein the first surface of the second chip is in a relatively liquid
2 state.

1 22. The microchip of claim 18, wherein the first surface of the second chip comprises a rubber
2 material.

1 23. The microchip of claim 18, wherein the first surface of the second chip comprises an
2 acrylamide layer.

1 24. The microchip of claim 18, wherein the first surface of the first chip comprises a nucleic acid
2 surface density of at least 50 pmoles/ cm², more preferably ranging from 50-2000 pmoles/

1 33. The microchip of claim 18, wherein the number of print chips generated from a single master
2 chip is at least two

1 **34.** The microchip of claim 18, wherein the nucleic acid is RNA or DNA.

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